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AUTHOR Witten, D. W.; And Others
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ABSTRACT

Very little research is available nationwide that measures the administrative use of computers in rural schools. A state survey of 154 rural Kentucky secondary school principals (representing a 51% response rate) focused on their knowledge about computers and use of computers for school administrative purposes. Only 14% of respondents had a computer at home, and only 21% had had special computer training. For administrative tasks related to students, computers were used by 72% for state standardized testing; by 51-63% for records, attendance, scheduling, and grade reporting; and by 27% for career planning. For administrative tasks related to staff, computers were used by 18-27% for records, evaluation reports, assignment, and leave. Only 15% of respondents were very committed to administrative computer use, while 56% were somewhat committed. This report contains recommendations to the Kentucky Department of Education concerning mandatory computer training for principals, guidelines and funding for the purchase of computer hardware and software, and networking among administrative computer users. A literature review discusses the ideal school administrative computer system, barriers to computer acceptance in rural schools, and factors to consider in hardware and software selection. (SV)

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COMPUTER USE BY RURAL PRINCIPALS

D. W. WITTEN
M. D. RICHARDSON
R. L. PRICKETT

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Darrell Witten is employed at **Nelson County High School**, Bardstown, KY. **Mike Richardson** is assistant professor and Coordinator of Educational Administration, and **Robert Prickett** is assistant professor, both in the Department of Educational Leadership at **Western Kentucky University** in Bowling Green, KY (502-745-4890).

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COMPUTER USE BY RURAL PRINCIPALS

ABSTRACT

This study was undertaken to determine the status of computer use by rural secondary principals in the Commonwealth of Kentucky. A review of the literature indicated that very little research had been conducted nationwide regarding administrative computer use in the nation's schools. A questionnaire was developed and sent to all secondary school principals in the Commonwealth. The data were collected and analyzed in regard to computer knowledge, training, commitment, plans, and computer use by secondary principals.

The results revealed a majority of Kentucky's secondary school principals are woefully uninformed and poorly trained to use computers in the management of their schools. As a result, computers were, at best, being used haphazardly and inefficiently. A correction procedure recommended was mandatory training and inservice for both existing and future secondary principals.

COMPUTER USE BY RURAL PRINCIPALS

In recent years, computers have been used successfully in the effective management of most businesses. Since secondary schools are some of the largest businesses, the logical assumption is that principals would be effectively and efficiently using the computer as a management tool. This study focused on the knowledge of rural Kentucky secondary school principals regarding computers as well as the extent to which the principals use computers for administrative purposes in their schools. In a period of time when principals are facing severe budget limitations due to the lack of funding from the state, they are called upon to manage the resources received in the most efficient manner to provide the best education possible for the students.

BACKGROUND

Investigation revealed very little research available on a national basis to measure the use of computers for administrative purposes in rural secondary schools. Research has been and was being conducted regarding computer use in the classroom, or at the district-office level but not in the day-to-day management of schools (Spuck & Anderson, 1983). In the absence of valid data, there is a need to determine exactly what building principals in

rural areas did or did not know about computers and how they were or were not using computers to assist in the efficient management of their school. Therefore, a survey questionnaire was designed specifically for this study and was mailed to all secondary principals in Kentucky (N=297). Since Kentucky schools are predominently rural, the results should be a reflection of rural not urban responses. However, for validation, responses received from the two urban areas of the state were removed from the final results of this study. Consequently, responses were received from 154 rural secondary principals, for a 51% response rate.

COMPUTER USE

Computers have been widely used in the classroom for educational purposes, but their use for administrative functions in most schools has received limited attention. The extent to which schools use computers for administrative purposes depends on the principal's level of computer literacy (Kearsley, 1988). Computer literacy or microliteracy is defined as the awareness of, knowledge about, and programming experience with microcomputers. Microliteracy must precede the effective and creative use of these machines as an administrator tool, a teacher tool, and a student learning tool. The degree of microliteracy an administrator possesses is largely due to the perceptiveness of the individual as well as the ability to effectively change methods of work as new technology is developed.

While many rural school districts have jumped on the computer bandwagon, most of the purchases have been for instructional purposes, not administrative uses. Administrative purchases of the latest technology have lagged behind the instructional uses for a variety of reasons. Typically, rural school principals have adopted the posture that if it works, don't fix it (Anderson, 1987).

According to Johnson (1985), one of the primary factors in the administrative use of computers is the principal's ability to accept change. Acceptance of computer technology cannot be expected unless consideration is given to each individual administrator's ability to handle change. Although most principals would admit work in the school office is usually backlogged, they are still hesitant to propose radical changes in the day-to-day operation of the school.

According to Pogrow (1985), paperwork is the most mismanaged opportunity in education. Computers have the potential to reduce much of this paperwork, by 50 to 90 percent in many situations. These improvements would allow for a complete return on the investment of computer hardware and software within months.

Using the old start-sharing computer systems, many principals experienced prolonged delays in receiving basic printouts which were needed to manage day-to-day activities. Printouts arrived either too infrequently to be of any use, or too late for administrators to take advantage of the information provided. Therefore, principals were forced to keep their own set of inefficient manual records in order to manage these daily

activities which ultimately led to both fear and suspicion of the computer.

According to Pogrow (1985), the ideal school administrative computer system contains the following elements:

1. Data entry is easy, quick and is done as the transactions are occurring.
2. The computer checks for errors at the time of data entry and makes it easy to immediately change the information.
3. Changes can be entered into the computer easily and the current status of student enrollments are updated instantly with the results easily accessible.
4. Common information is automatically transferred across applications.
5. In schools with more than 500 students it is possible to have several linked computers or terminals so that people in different parts of the building can be working on the same system at the same time.
6. Principals and staff without technical backgrounds should be able to easily ask basic questions of the stored information and obtain immediate results.
7. Principals and staff without technical backgrounds should be able to easily design report formats in minutes.

HARDWARE AND SOFTWARE SELECTION

While it is a huge task to evaluate a student information system adequately, according to Anderson (1987), an administrator

cannot afford to choose one without evaluation. The excessive costs of an inadequate student information system could be very damaging to the school district and the careers of administrators and/or board members who might have championed such a system. It is possible to muddle through with an outdated and inefficient information management system but why take the chance?

The principal must be aware of the obsolescence factor. He/she should not purchase computers and software without a great deal of forethought and consideration. Crucial to the success of any purchase was the evaluation of the questions "Where are we?" and "Where do we want to go?" The principals who can answer those two questions will be able to decide how they are going to get there and how they will know when they have arrived (Johnson, 1985).

The first thing that a principal should consider is that all school offices are different. Each office has its own routine and certain strengths and weaknesses in its personnel. The most important question a principal could ask was: "Who requires what information, when, and where"? According to Anderson (1987), the principal must consider the following:

1. How much time does it take to search for information?
2. How much time would it take to input the information needed to provide those reports touted as useful by the computer salesperson?
3. Will verifying and validating the information be a time consuming process?
4. How much time does my staff spend converting data into information I can use as a principal?

5. Can the distribution of the information be supported by computer technology?

There are two components to every computer system-the hardware and the software. The administrator should find out what vendors could assist in the software selection or design and the resulting need for computer hardware. Administrator's should always consider the prospective vendor's reputation (Cantrell, 1989).

Anderson (1987) provides these software selection guidelines:

1. The software that pleased principals the most usually came from designers who were school administrators first and microcomputer designers second.
2. Companies that had been producing administrative Software for longer periods of time usually had programs with fewer errors.
3. A company that was producing well-designed and well-written software should willingly provide a number of customer references.

Good student information systems consist of several integrated modules. Common modules are student data base, attendance, accounting, grade reporting, and class scheduling for secondary schools. Attendance modules bring to attendance accounting an excellent audit trail and a sense of data integrity that has previously been non-existent. Attendance may be checked by period using an optical scanner and cards for each student.

Many systems had additional modules that may have included test scoring and analysis, test history, and instructional

materials. Large, rural secondary schools usually require a very efficient class scheduler. As such systems may include the ability to perform different functions, it is important to determine the value of these additional functions to the district when selecting a student information system (Anderson, 1987).

Data entry is a time consuming and relatively expensive task which could be expedited by the integration of modules so the basic student data must only be entered once. Of course, school district requirements could vary substantially by state, county, student population, grade level, special schools, and unique district reporting requirements. Other factors to explore include user inquiry capabilities, software flexibilities, maximum school size supported, quality of program code, programming documentation, hardware reliability, video screen response time, quality of vendor support, and the availability of countless other important features. Purchasers must know what to look for before they go shopping (Anderson, 1987).

THE VISION OF THE FUTURE

Rural principals are trying to thrive and survive with the latest rage of the technological age, the computer (Crawford, 1982). Rural school principals can make the difference between whether the school system will have a well-oiled machine or a bucket of bolts.

Educational administrators have to look forward to the school office of the future. Office automation is a tool rural

administrators can use to better manage their institutions. In order to use office automation successfully, administrators should educate themselves about these differences in the office now as compared to what their office of the future can become (Cantrell, 1984).

The business of education is becoming more complicated and competitive each day (Johnson, 1985). In order to be a successful school administrator, there are problems which have to be overcome. Some of those problems are (Crawford, 1985a):

1. Fear of computers or the problems a computer might cause.
2. Initial cost of hardware and software.
3. Lack of knowledge about what tasks can or cannot be performed by a computer.
4. Security of the methods needed to ensure limited access to data.

Rural principals can use computers in very creative ways. A small laptop computer can help structure the elements of clinical supervision, record data items, and most importantly, quickly produce a complete transcript of classroom interaction for the teacher prior to the post-observation conference (Kuralt, 1987).

The availability of more effective computer systems means that office automation is reaching a point where paperwork could be vastly simplified. No longer should the rural school administrator be forced to work till midnight to get reports completed. More time can be made available to deal with student needs (Pogrow, 1985).

Some states have adopted a very progressive effort to introduce computers into the management of the schools. Georgia is attempting to automate the schools of the entire state by installing the Statewide Information System (SIS). This project is slated to be completed by 1994 and will radically reform the day-to-day operations of the state's 1800 elementary and secondary schools as well as 30 other technical and vocational institutions. By 1994, the schools will to be equipped with specialized applications that run on minicomputers, local-area networks and stand-alone microcomputers which will give each school access to the grades and attendance reports of more than 1.3 million students (Pang, 1989).

Experience with using a computerized management system should be an express requirement of all new administrators and counselors, whether in rural school districts or urban districts. Once a rural secondary school has good administrators who are take charge persons, properly selected computer systems could substantially improve the quality of administrative practice (Pogrow, 1985).

For a significant change like the introduction of computers into the schools to be successful, educational administrators must lead the way. They will be either the major leaders or barriers to successful computer use. With the new breed of school administrator currently being trained, the computer will become a tool to revolutionize student records and information processing.

Educational administrators are subjected to immense social pressures for the improvement of the education of students in their institutions, particularly in rural areas. Reform of the curriculum and strengthening of teacher qualifications are currently receiving high visibility, but one of the most precious resources--time--must be conserved and managed to permit other factors to operate in improving educational results. Microcomputers, when properly used, assist administrators in saving time ordinarily consumed in routine tasks, and thus provide additional time for working directly on vital leadership functions. Improvements in leadership efficiency are not likely to be significant, however, unless the computerized administrative system has been carefully built around a comprehensive and systematic plan clearly establishing goals, alternative methods, costs, benefits, responsibilities, and schedules for the implementation of the computerized system. As technical capabilities continue to increase, cost continues to decline, and as humans improved their abilities to utilize the new technological tools, a new era in administrative computer applications appears imminent (Spuck, 1983).

FINDINGS

The respondents in this study reported only 13.64% who owned a computer at home and only 20.78% who had any special computer training. (See Tables I and II). Responding rural principals did not use computers extensively in school management. For

example, only 62.99% used computer scheduling, 53.90% used computer reported grading and 51.30% used the computer in maintaining attendance data. Only 26.62% of the responding rural principals used the computer for student career planning and placement (See Table III).

Computer use was almost non-existent in the administrative tasks related to school personnel. Only 27.27% of the responding rural principals used the computer to assist in the placement or assignment of faculty and 3.24% used the computer in recruiting faculty. Less than 2% (1.94) used the computer in teacher evaluation (Kuralt, 1987) although 17.53% used the computer to generate evaluation reports (See Table IV).

Surprisingly, only 15.58% of the responding principals were "very committed" to use administrative use of computers while 56.49% were "somewhat committed" and 27.92% were "not committed" (See Table V).

TABLE I

RESPONDENTS WHO USE A COMPUTER AT HOME

COMPUTER USERS	N	PERCENTAGE
Yes	21	13.64%
No	133	86.36%
TOTALS	154	100.00%

TABLE II

RESPONDENTS HAVING ANY SPECIAL COMPUTER TRAINING

TRAINING	N	PERCENTAGE
Yes	32	20.78%
No	122	79.22%
TOTALS	**154**	**100.00%**

TABLE III

ADMINISTRATIVE TASKS RELATED TO STUDENTS

	YES		NO	
Task	**N**	**Percent**	**N**	**Percent**
Records	91	59.10%	63	40.90%
Scheduling	97	62.99%	57	37.01%
Attendance	79	51.30%	75	48.70%
Grade Reporting	83	53.90%	71	46.10%
Discipline	62	40.26%	92	59.74%
Career Planning & Placement	41	26.62%	113	73.38%
National Standardized Testing	58	37.66%	96	62.34%
Kentucky Essential Skills Testing	111	72.08%	43	27.92%
Other Student Testing	13	8.44%	141	91.56%

TOTAL N = 154

TABLE IV

ADMINISTRATIVE TASKS RELATED TO PERSONNEL

	YES		NO	
TASK	N	PERCENT	N	PERCENT
Staff Records	31	20.12%	123	79.88%
Evaluation Reports	27	17.53%	127	82.47%
Recruitment	5	3.24%	149	96.76%
Selection	16	10.38%	138	89.62%
Placement or Assignment	42	27.27%	112	72.73%
Leave (Sick or Other)	39	25.32%	115	74.68%
Substitute and Part-time Employees	12	7.79%	142	92.21%
Observation Tool	3	1.94%	151	98.06%

TOTAL N = 154

TABLE V

RESPONDENT'S COMMITMENT TO ADMINISTRATIVE COMPUTER USE

Type	N	Percentage
Very Committed	24	15.58%
Somewhat Committed	87	56.49%
Not Committed	43	27.92%
TOTALS	**154**	**100.00%**

TABLE VI

BRAND OF ADMINISTRATIVE SOFTWARE USED

Brand	N	Percentage
School Master	51	33.12%
Osiris	30	19.48%
None	63	40.91%
Other	10	6.49%
TOTALS	**154**	**100.00%**

TABLE VII

RESPONDENTS HAVING A PLAN FOR ADMINISTRATIVE COMPUTER TRAINING

Plan	N	Percentage
Yes	56	36.36%
No	98	63.64%
TOTALS	154	100.00%

IMPLICATIONS

In a time in which limited resources are being devoted to Kentucky's schools, it is certain that we must manage the existing resources as efficiently as possible. The rural secondary principal needs to have a firm command on the available information needed to make the necessary decisions to effectively manage the school in which he/she worked. Computers are the answer to many of the information management needs of the rural principal. Rural principals must actively seek the information needed to use the computer as a productivity tool.

Computer use is being widely accepted in a limited number of Kentucky's schools. This trend is one which must continue into the 1990's so that the rural secondary principals can manage the information and limited resources available.

RECOMMENDATIONS

The recommendations are based upon the review of literature and survey findings. First, it is recommended that the Commonwealth of Kentucky Department of Education mandate computer training for all current and future rural secondary school principals. This mandatory education or training could be provided by the State Department of Education, the universities which prepare school administrators, or the professional

organizations to which administrators belong. After completing the mandatory training the rural school administrator should be able to:

1. Describe the possible administrative uses of computers.
2. Determine what applications the school would have which could benefit from computer use.
3. Select the best Software and hardware for a given need.
4. Develop a plan for the successful implementation and use of computer applications.
5. Use the computer as a personal productivity tool.

Second, it is recommended that the Department of Education provide direction and even standardization on the computer hardware and software to be used in the administrative areas. Until some standards are developed by the state, Kentucky's rural school administrators are likely to purchase computer software and hardware which may not meet their needs as well as the needs of the State Department of Education.

Third, it is recommended that major revenue allocations from the state be made to fund the purchase of computer software and hardware. The major obstacle to purchasing computers is the lack of money. The Commonwealth must recognize and address this need with adequate funds before there will be any major implementation of computers into a majority of Kentucky's rural schools. Funding must also be allocated for a state wide computer information system to be developed.

Fourth, it is recommended that a source of information, which rural school administrators could use to share information

and to gain the necessary knowledge they need to be successful in their use of computers, must be developed. This should be accomplished by establishing a users group of rural school administrators who could meet and share ideas with each other as well as those who desire information about the proper ways to begin the implementation of an effective computer system.

Fifth, it is recommended that an electronic bulletin board for Kentucky's rural school administrators be established to allow principals to share ideas about their successful uses on computers. This service could also be a source of information that would help rural administrators solve various problems they were having with their computer software or hardware. The service must be easy to use and one which the State Department of Education would provide as a resource tool to the school administrator.

Sixth, there is a need for continued research into the developments that should be taking place in the future of computer use in the administrative areas of Kentucky's rural schools. This study should be repeated as well as expanded upon. Research should be conducted in the area of elementary school administrative use. Further, research should conducted which would compare schools of different sizes and types as related to computer use. Additional research would also be beneficial in determining how successful rural school administrators have used computers in the administrative areas of their schools.

When comparing the newness of computer technology to the age of most principals, it was obvious that most principals have

received no formal training in the use of computers. Typically, principals who did not understand the value of technology are somewhat hesitant to actively seek continuing education in the area of computers. By human nature people are resistant to change and scared of exploring the unknown.

CONCLUSIONS

Based upon the research, a majority of rural secondary principals in the Commonwealth of Kentucky are not using computers to assist them in managing schools. These principals received little or no formal training in the use of computers. Beyond this, the school system in which they work does not offer any type of training in the use of computers to help them manage schools. Also very evident was the lack of planning and commitment to computer use in the administrative areas of Kentucky's rural schools. Most disturbing was the lack of commitment to computer use in the area of administrative school management.

Basically, the data collected led to several conclusions. Kentucky's school administrators are in need of training, preparation, and knowledge regarding the effective use of the computer as a management tool. There is a need to assist principals in recognizing the importance of administrative computer usage as a good management and personal productivity tool. The obvious lack of knowledge and commitment to learning about computers was a startling fact.

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